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NOTE BY THE SECRETARY-GENERAL

The Secretary-General has the honour to transmit to the members of the Security Council the attached communication which he has received from the Director General of the International Atomic Energy Agency (IAEA).

Annex

Letter dated 25 February 1992 from the Director General of the International Atomic Energy Agency addressed to the Secretary-General

Please find attached the report of the tenth IAEA Inspection in Iraq under Security Council resolution 687 (1991). You may deem it appropriate to transmit the report to the members of the Security Council. I remain, of course, available with the Chief Inspector, Professor Maurizio Zifferero for any consultations you or the Council may wish to have.

(Signed) Hans BLIX

REPORT ON THE TENTH IAEA ON-SITE INSPECTION IN IRAQ
UNDER SECURITY COUNCIL RESOLUTION 687 (1991)

5 - 13 February 1992

SALIENT POINTS

- The signs of better co-operation first perceived in the course of the ninth inspection were again evident. The Iraqi counterpart stated that the shift in attitude from a defensive to a co-operative one was prompted by the fact that the extent of the Iraqi nuclear programme and its main objectives had by now been fully assessed and Iraq was anxious to turn the page, to help implement the plan for future ongoing monitoring and verification and, in so doing, to remove an important obstacle to the lifting of sanctions.

- An important task of the tenth IAEA team was to inspect the SAAD-13 State Establishment, in Salah Al-Din province, indicated by the Special Commission as a site where an underground nuclear reactor intended for significant plutonium production may have been located. A detailed inspection of the site and the surrounding area did not reveal any underground facility of that kind. Information and documents gathered during the inspection do not support the reports that such an underground facility exists at this site.

- The inspections at the other new sites designated by the Special Commission did not provide any evidence of activities relevant to Iraqi's clandestine nuclear programme.

- A wide range of follow-up activities from previous inspections were carried out successfully.

- Nuclear experts from the IAEA team were provided to participate in a Special Commission inspection (UNSCOM-30) at the request of the Special Commission's Chief Special Inspector.

INTRODUCTION

1. This report summarizes the findings of the tenth inspection carried out by the IAEA under Security Council resolution 687 (1991) with the assistance and co-operation of the Special Commission of the United Nations. The inspection took place from 5 to 13 February 1992 and was headed by Mr. Maurizio Zifferero of the IAEA as Chief Inspector. The team consisted of 25 inspectors and 6 supporting staff; it comprised 14 nationalities.

2. Eight new sites had been designated to the IAEA by the Special Commission:

- The "Future Design Centre" in downtown Baghdad;

- The agricultural research facility operated by the Iraqi Atomic Energy Commission at Latifiya, south of Baghdad; and

- Six locations in the northern province of Mosul.

In addition, two sites visited in the course of previous IAEA inspections were designated by the Special Commission:

- A transportation and engineering maintenance facility adjacent to the Tuwaitha Centre; and

- The SAAD-13 State Establishment located in Salah Al-Din province - also called the Saiiadine Establishment.

All the designated sites were inspected by the tenth IAEA team. A description of the inspections of the designated sites is contained in Annex 1.

3. Follow-up activities from previous inspections at and around the Tuwaitha Centre and at Al Atheer, Al Qa Qaa, Al Furat, Badr, Iskandariya, Nassiriya (this site being visited for the first time), Mosul and Rashdiya were carried out successfully. Nuclear material accounting work continued, with a view to reconciling IAEA findings and Iraqi declarations; progress is slow in the absence of accurate records, and this work will have to be pursued further.

4. The IAEA team provided technical support for a Special Commission inspection (UNSCOM-30) at the central computer facility of the Ministry of Industry and Minerals, in downtown Baghdad. This site had originally been designated by the Special Commission for inspection by the tenth IAEA team. However, in the course of the preparations for the tenth team's mission, in Vienna, it became apparent that the objective of this inspection lay largely outside the competence of the IAEA and there was not time to acquire the necessary expertise. It was therefore agreed to shift the responsibility for this inspection to the Special Commission, nuclear expertise being provided by the IAEA as required. This arrangement proved fully satisfactory. The results of this inspection will be contained in the UNSCOM-30 report. Useful information was obtained about the mainframe computers available, but no evidence regarding nuclear applications.

5. Some important lessons were learned in the preparation phase and during the tenth inspection mission:

- Although the designation of sites on the basis of information received from Member States is the responsibility of the Special Commission, as clearly established by Security Council resolution 687, the participation of IAEA technical personnel in the pre-designation analysis of that information would be very useful; such technical screening of the information made available to the Special Commission might be of help in improving the designation process.

- The participation of one or more Special Commission representatives in the detailed IAEA inspection planning proved useful and should be continued in the case of particularly complex inspections.

- The declared intention of the Iraqi authorities to step up their co-operation and adopt a "coactive" rather than a "reactive" approach in helping to understand the objectives of their nuclear programme as it developed over a period of 15 years should be encouraged.

INSPECTION ACTIVITIES

Co-operation by Iraq

6. Since the inception of IAEA inspections under Security Council resolution 687, Iraqi co-operation has gone through highs and lows. Lows were experienced in particular during the second inspection mission, when inspectors were denied access to the Abu Ghraib and Fallujah military installations, and during the sixth inspection mission, with the well-known incident of the parking lot. Significantly, lows coincided with the discovery by the IAEA of key aspects of the clandestine nuclear programme - such as the EMIS and weaponization projects.

A steady improvement in Iraqi co-operation began during the seventh inspection mission. During the ninth inspection mission, for instance, the Iraqi authorities helped the IAEA to identify material procured for Iraq's centrifuge manufacturing programmme, declaring hitherto undeclared stocks of aluminum forgings and maraging steel.

The Iraqi side declared that the reason for the enhanced co-operation is a wish to accelerate and conclude, to the IAEA's satisfaction, the present phase of activities under Security Council resolution 687 and to proceed as soon as possible to the long-term ongoing monitoring and verification phase. The Iraqi authorities say that they look forward to an early start of this phase as they hope that it will contribute decisively to the lifting of sanctions.

They further maintain that, with the exception of information about sources of procurement, the IAEA has discovered almost all there is to know about the principal objectives, achievements and installations of Iraq's nuclear programme - if some information is still missing, it relates only to details.

In the course of the tenth inspection mission, the Iraqi authorities went a long way to facilitate and expedite the IAEA team's work, showing willingness to help in clarifying the complex coding system used for project classification in the different programme areas.

Further, they declared their readiness to sit for about a week together with IAEA experts in order to discuss in detail the conception, background and justification of Iraq's programme and the reasons for certain decisions - in other words, the complete rationale of their effort.

Whatever the reason for this offer, it appears to represent a major change in attitude and a move from a merely "reactive" to a fully "coactive" approach. Full use should be made of the offer.

Position of the Iraqi authorities regarding the provision of information pursuant to Security Council resolution 715

7. Meetings were held with Iraqi representatives for the purpose of clarifying the position of the Iraqi authorities regarding their non-compliance with the obligation to provide information as defined in the IAEA plan for future ongoing monitoring and verification - contained in United Nations documents S/22872/Rev. 1 and Corr. 1 and approved by the Security Council in its resolution 715 (1991).

8. The information transmitted as an attachment to a letter of 19 November 1991 which the Foreign Minister of Iraq addressed to the President of the Security Council does not correspond to the requirements of the plan approved by the Security Council. In particular,

- Annex 2 to document S/22872/Rev. 1 clearly specifies that the initial information to be submitted by Iraq shall cover the period from 1 January 1989, whereas the information received from Iraq reflects the situation as it was when the information was prepared, in November 1991 - i.e. after the Gulf War and after the subsequent destruction caused by the Iraqi side itself.

- The list of items to be reported to the IAEA, contained in Annex 3 to document S/22872/Rev. 1, should not be limited to items in the possession of the Iraqi Atomic Energy Commission, but should include all items of the kind in question existing in Iraq.

9. The Iraqi representatives conceded that the information transmitted so far did not conform to the above-mentioned requirements. They added that, while modifications could be made in order to reflect the situation as it was on 1 January 1989, they could not comply with the second requirement - they deemed it practically impossible to extend the list to cover all items of the kind in question existing in Iraq.

Follow-up activities deriving from previous inspections

10. During the ninth inspection, the Iraqi authorities declared 96.75 tonnes of maraging steel that represented the bulk of a 100-tonne procurement. The remaining 3.25 tonnes had been declared previously. They stated that the maraging steel, in the form of rods and tubes, had been taken by the military (after the Gulf War but prior to the beginning of inspections) to foundries where it had been melted and poured into "ingots". The "ingots" had been brought together at the State Establishment for Mechanical Works at Iskandariya. The ferrite magnets intended for the centrifuge stators had been ground to powder, which was also being stored at this location. The ninth inspection team inspected these materials on the last day of its mission. Time was limited, so the team confined itself to developing a rough estimate of the quantity of material and the taking of a few samples. The Iraqi side was requested to distribute the "ingots" over a larger area to facilitate a more detailed assessment at a later date. Preliminary analyses of samples of steel (declared to be maraging) collected at Iskandariya during the ninth inspection indicates that the steel has a chemical composition corresponding to maraging.

11. The tenth inspection team visited the State Establishment at Iskandariya to carry out a more thorough inspection of the maraging steel and ferrite powder. The "ingots" had been distributed over an area such that it was possible to recognize three different sizes. The "ingots" were stratified (6 small pieces, 51 medium pieces and 40 large pieces) and items from each stratum were selected at random and weighed. The total mass was estimated to be 95.6 tonnes (±10%) which, given the state of the material, is in reasonable agreement with the declaration. Additional samples for detailed metallurgical analysis were taken. An analysis of grain structure, in combination with chemical analysis, will indicate: (i) whether the steel still has the properties of maraging steel, (ii) if not, whether it is possible to reconstitute it as maraging steel, and (iii) who produced the material. The ferrite powder (~ 100 liters) stored in a steel box was examined again. The box had a gross weight of 400 kg. An additional sample was taken.

12. The ninth IAEA inspection team was informed by Iraq that aluminium stock materials for the manufacture of centrifuge components - in the form of tube extrusions for the manufacture of vacuum housings and molecular pumps and forgings for the manufacture of top and bottom flanges - had been taken to the Ur Establishment (the only aluminium smelter in Iraq) at Al Nassiriya and melted. The Iraqi Atomic Energy Commission arranged for the tenth inspection team to visit the Ur Establishment to inspect this material.

13. Iraq had confirmed the receipt of 300 tonnes of aluminium alloy (AlMgSi 1 F31) tube extrusions for the manufacture of vacuum housings and 84 tonnes of aluminium alloy (AlMgSiPb F28) tube extrusions for the manufacture of molecular pumps. This material had been reportedly melted together and poured into slabs of about 3 tons each. The slabs were item-counted and three selected for weighing. Extrapolation to the whole stratum gives 415 tonnes (± 10%) of aluminium alloy, which is in reasonable agreement with the declaration. All three slabs were sampled for chemical analysis. The ninth inspection team was provided with a declaration about the aluminium forgings for the manufacture of the top and bottom flanges for the centrifuge vacuum housings. The forgings were cut into pieces and then melted. Since the work was done in haste, some of the parts were not completely melted. The team obtained a relatively intact forging from a block with a saw. Owing to the haste, the blocks, which weighed about 300 kg each, were shaped and piled irregularly, which made weight estimation difficult. The two piles were estimated to have 345 blocks in total, which correspond to 125.6 tonnes of aluminium.

14. Early in December, the Iraqi authorities had informed the IAEA Action Team of a developing problem with the water chemistry in the Location B, tanks, where the irradiated fuel from the Tamuz I and IRT-5000 reactors are being stored; a rise in the level of the water table was resulting in the seepage of salt-containing groundwater into the tanks. The Iraqi side expressed concern that the problem, if not corrected, could lead to accelerated corrosion of the fuel cladding. Several members of the tenth inspection team, working with the Iraqi counterparts, devised a temporary solution by cycling fresh water through the tanks (for about 1½ hours per

tank). However, this will be a recurring problem until the level of the water table drops. Further, the rate of corrosion observed for several fuel assemblies was greater than expected. The fuel channel of the Tamuz I reactor is largely undamaged. The Iraqi authorities proposed that they clear the channel of rubble and prepare it to again store the irradiated fuel. They estimate that the channel could be ready for fuel storage in 6-8 weeks. With the increasing risk of a radiological incident at Location B and the delays in removing the irradiated fuel from Iraq, the movement of the fuel from Location B, with the consent of the Special Commission, will be scheduled as soon as possible.

15. Another follow-up action planned for the tenth inspection team was to sample and arrange for the transfer of uranium wastes from the Al Jesira UO_2 plant. Wastes from the UO_2 plant, declared to contain 13 tonnes of uranium, was being held in an oil storage tank about 30 km from Al Jesira. According to explanations given, the total volume is approximately 2500 m^3. The tank content consists mainly of water, covered by a layer of 50-100 m^3 of kerosene. The major part of the uranium is contained in a sludge deposit at the bottom of the tank (about 50 cm in depth), covered by 10-20 cm of suspension.

16. A procedure has been worked out with staff from the Al Jezira plant for the recovery of the uranium. The solution part of the tank's contents will be removed and transferred back to open-air evaporative tanks at Al Jezira. The sludge part will be recovered separately and treated to yield a dry product. In addition, the uranium contained in the open-air tanks, which is expected to be a minor part of the total material involved, will be recovered. The product of this process will then be transferred to Location C at Tuwaitha. Prior to this inspection, Iraq had made the adaptions to the tank necessary in order to transfer the solution part into tankers for transport back to Al Jezira. The filling of the first three tankers and the emptying of two at Al Jezira were observed during this inspection. Samples from all three tankers were taken for analysis. The solutions contained suspended uranium material. The final verification of the total uranium contained in the tank will be possible when the product of the recovery process is presented for weighing and sampling.

17. The revised Iraqi declaration of 2 December 1991 and various pending issues regarding the nuclear material balance were discussed, in detail, with the Iraqi side during the tenth inspection mission. The purpose of the 2 December 1991 revision was to include all the nuclear material declared by Iraq in its three previous declarations and in subsequent correspondence. The following inconsistencies were found and discussed:

- Plutonium is missing from the declaration. The reason given by the Iraqi authorities is that the plutonium had already been shipped to the IAEA's Safeguards Analytical Laboratory (IAEA-SAL). However, the HEU fresh fuel elements shipped to the USSR and the Uranium-233 shipped to IAEA-SAL were included.

- Solid wastes - which included 3230 kg of uranium content in the hold-up, 250 kg of uranium content in ventilation filters and 250 kg of uranium content suspended in the TBP/kerosene solution at Al-Jesira - were not been included.

- The amount of UO_2 enriched to 2.6% reported in the Iraqi declaration is correct according to the supplier's shipping documents and a 13 May 1982 report to the IAEA. However, Iraq reported a different value on 1 June 1982. A correction of the Iraqi ICR has been requested in order to adjust the IAEA records.

- The amount of UO_2 produced at Al-Jesira was reported to have been 96,095 kg (83,602.6 kg of uranium content), whereas in the itemized list provided by the Iraqi authorities, the amount is 96,976 kg (84,445.5 kg of uranium content).

- The origin of the radioactive wastes is the Radiochemical Laboratory at Al Tuwaitha, and not Akashat as specified in the declaration.

- Minor corrections were made with regard to other declared items.

18. A number of issues regarding the nuclear material balance were clarified during the tenth IAEA inspection mission. However, no final conclusions can be drawn regarding the balance in the Al Jesira plant, the UO_2 of Brazilian origin and the material of Italian origin recovered from the fuel fabrication facility until:

- the tank containing liquid waste with solid slurry at Al Jesira has been emptied and its declared 13,000 kg of uranium recovered and verified; the 3,730 kg of uranium kept as hold-up in the process equipment (pipes, filters, conveyors, etc.) have been recovered and verified (verification might prove to be impossible since part of this material is deposited in 1,800 m of pipes which were used to transport the wastes from the laboratory to the waste basins).

- the 2,600 kg uranium of Brazilian origin sent to the Chemical Engineering and Research Laboratory at Al Tuwaitha (Building 85) and converted to UCl_4 and ADU have been balanced after the verification results from the analysis of samples taken during the eighth and tenth missions are received;

- the uranium content of the 1,181.5 kg of UO_4 slurries is known (it has to be known before conclusions can be drawn about the balance of the material processed at the fuel fabrication facility; the sample analysis results from IAEA-SAL are pending).

- the results of the impurities analysis are available (they will provide information needed to confirm the declared origin of the various nuclear materials presented by Iraq).

The Iraqi authorities indicated their intention to submit yet another nuclear material declaration as a result of the discussions.

19. Follow-up and monitoring activities were carried out during the tenth inspection mission at a number of previously inspected sites :

- Al Qa Qaa - seal check and replacement at HMX storage bunkers.

- Al Atheer - additional sampling at site 100 and checking of seal's on equipment (the assembly and movement of some equipment were noted here).

- Badr - seal check and collection of additional information/photographs to aid identification of the manufacturer of the CNC machines stored there.

- Al Furat - clarification of operations planned for specific parts of the facility.

- Rashdiya - additional sampling with emphasis on the south end of the R & D building.

- Tuwaitha - inspection of Tamuz I pumps and recording of identification data; checking and replacement of seals on hot cells; sampling and sealing of mixer-settler moved from Tarmiya to Tuwaitha; evaluation of previously safeguarded material under seal in the new storage area for transfer to Location C (scheduled for an upcoming inspection).

Future directions of work

20. In the opinion of the IAEA, the following important factors should be taken into account when considering future directions of work:

i) The designation of sites for the purpose of searching for documents and records has to be carefully analyzed. Recent inspections have revealed nothing, and the Iraqi authorities have repeatedly stated that they embarked on a systematic and thorough destruction of documents and records following the sixth IAEA inspection mission.

ii) The IAEA should intensify its efforts in the procurement area, with the co-operation of Member State Governments. As indicated above, the Iraqi authorities, although now far more co-operative, are still not willing to disclose their procurement sources. In addition, to the best of the IAEA's knowledge most of the procured material and equipment has been destroyed. IAEA co-operation with exporting countries may well be the only way of obtaining new information.

iii) After ten IAEA inspection missions, the mapping of the overall effort deployed by Iraq in its clandestine nuclear programme has produced a picture which is fairly coherent and consistent. It is possible that a considerable part of the programme has been identified and assessed and that what is left is a matter of detail. However, further inspections are needed to ascertain whether this is, in fact, the case.

ANNEX

INSPECTIONS AT DESIGNATED SITES

1. Ten designated sites were inspected by the tenth IAEA inspection team:

- Salah-al-Din General Establishment (SAAD-13) located about 25 km north of Samarra;
- Tuwaitha Transportation Centre and the Engineering Services Centre located just outside the Tuwaitha berm;
- "Future Design Centre" located in a building near the Rashid Hotel in central Baghdad;
- Latifiya Agricultural Farm located about 25 km south of Baghdad;

and six sites in a relatively small area north-east of Mosul:

- Badush Cement Works;
- North Mosul Prison complex;
- Badush Dam;
- Badush Dam Construction Support Area;
- Mosul Military Production Facilities (SAAD-24);
- Mosul Construction Support Facility.

Eight of the locations were new designations and two (SAAD-13 and the Engineering Services Centre) were re-designations of previously inspected sites. An additional designated site - a computer centre located in the Ministry of Industry and Minerals - was inspected by an UNSCOM team (UNSCOM 30) with support from the tenth IAEA team.

2. The Salah-al-Din General Establishment (SAAD-13) was inspected on 10 and 11 February. This location, situated about 25 km north of Samarra on the left bank of the Tigris River, was designated as a possible site of an underground plutonium production reactor. The SAAD-13 Establishment had been visited by a nuclear inspection team in the course of the seventh inspection mission. However, that visit was in the context of a search for electronic components that had been assembled at SAAD-13 for the Iraqi Atomic Energy Commission (IAEC) EMIS programme.

3. The 10 February inspection began with a meeting between the inspection team, representatives of the SAAD-13 Establishment (including its director general) and the inspection team's Iraqi counterpart. The director general provided the inspection team with a detailed description of the Establishment's purpose and how the site was developed:

- The Establishment was constructed by a French firm, essentially under a turn-key contract, with the objective of manufacturing high-frequency military communication equipment and radar, under license granted by the French firm, for the Iraqi army.

- The plant was constructed between mid-1980 and the end of 1984. After licensing, operations began in 1985. The director general indicated that representatives of the French firm were present at the site continuously from mid-1980 until the 2 August 1990 invasion of Kuwait. The manufacturing license from the French firm and the final acceptance certificate from the Iraqi side are still pending.

- To house the plant workers (~3,000) and their families, a large village was built just to the south of the plant site, by a Korean firm during the development of the plant site. A French construction camp is located next to the plant site, between the plant site and the village.

- A detailed description of the entire site's water intake, treatment and discharge (including engineering drawings) was given to the inspection team. The figure given for water intake capacity is 300 m^3/hr split between the industrial site

(40%) and the village (60%). A second water intake supplied 50-60 m^3/hr to the French construction camp. Water treatment facilities at the plant and the village are consistent with the stated intake capacity. Discharge rates for sewage (plant and village) and industrial waste were given as 90 m^3/hr and 10 m^3/hr respectively. A well on the plant site has been established to deal with periodic water intake problems.

- The site was being developed during the Iran-Iraq war. Underground shelters for protection against air raids were constructed by an Indian firm, beginning in 1984. They took about one year to complete.

- The SAAD-13 Establishment and a portion of the village were badly damaged during the Gulf War. Reconstruction efforts are clearly visible. The director general stated that Iraq was going ahead with the original plan for the establishment.

4. The second part of the meeting was devoted to a description, provided by the inspection team's Iraqi counterpart, of the IAEC power reactor siting work. The work was described as having occurred in three phases:

- Phase I was devoted to the identification of a site for a nuclear power plant in an area north of Samarra. Proposals were solicited and received from a number of west European firms. This exercise began in the late 1970s and continued until 1981.

- After the Osirak bombing in 1981, the IAEC was instructed to examine the possibility of siting underground. This exercise, covering the period from 1982 to mid-1983, constituted phase II. Proposals relating to site selection and the estimation of various technical parameters were solicited from a number of foreign firms (the inspection team was informed of the names of the firms). The Iraqi authorities emphasized that the motivation for underground siting was protection and not the concealment of a clandestine activity. They further indicated that the various firms were unanimous in concluding that the costs for an underground facility would be prohibitive and that underground siting would provide very little additional protection. A 1983 decision to abandon underground siting concluded phase II.

- Continuing work on the qualification of an above-ground site for a nuclear power plant and a 40-70 MW materials test reactor constituted phase III. The work, focussing on two sites north of Samarra, was described as being done in co-operation with the IAEA.

Follow-up aimed at obtaining a better understanding of the candidate sites, the site selection work carried out by foreign firms and the work reportedly done in co-operation with the IAEA is planned by the Action Team.

5. All buildings constituting the SAAD-13 Establishment, the open ground between the plant site and the river, the water intake, treatment and discharge facilities for both the plant and the village, the underground shelters and a large, centralized heating/cooling facility for the village were inspected. The electrical supply to the site was evaluated vis a vis the Iraqi declarations for both the plant and the village. The river bank, for 500 metres above and below the canal discharge point, was examined from a small boat for additional water intakes/outlets. A team of divers collected water samples above and below the discharge canal and sediment samples from points along the bottom of the river, and looked for water intakes/outlets below the surface (the search conditions were extremely poor). Wipe samples were collected in the large manufacturing building and in the adjacent foundry/machine shop at the SAAD-13 Establishment. The entire site was surveyed by helicopter with video and still camera.

6. The inspection team's conclusion, pending sample analysis results, is that it is unlikely that an underground reactor has been constructed at this location. The Iraqi side was very co-operative throughout the inspection.

7. Two co-located sites - the Tuwaitha Transportation Centre and the Engineering Services Centre - just outside the Tuwaitha berm were inspected on 6 February. The Transportation Centre was inspected first. Prior to the Gulf War, the Centre provided central dispatching services for the movement of people, material and equipment between IAEC project sites. The Iraqi authorities indicated that they had concluded, well before the Gulf War, that the dispatching records maintained by the Centre represented a security risk to their highly compartmentalized programme, and all records had been destroyed. No operating records of any kind were found during the

inspection. According to Iraqi statements, the Centre's function is now limited to providing transportation for personnel working at Tuwaitha. All vehicles at the Centre for maintenance at the time of the inspection were of types suitable for moving people as opposed to equipment and material. Wipe samples were taken from a luxurious bus, apparently used to transport VIPs.

8. The Engineering Services Centre was inspected during the afternoon. The site had been previously inspected by the first IAEA team, in May 1991. Again, no operating records of any kind were found. Prior to the Gulf War, the Engineering Services Centre was an IAEC facility providing utility maintenance and engineering design services to Tuwaitha and the other IAEC sites. The Iraqi side indicated that, since the war, the Centre has stayed busy with a variety of tasks associated with post-war reconstruction. The IAEC is no longer its only customer. The facility, including an electronics testing and repair area and several small machine shops, can serve a variety of needs. Damaged manipulators from the Tamuz 1 reactor seen at the site during the first IAEA inspection were examined, and the Iraqi side agreed to move these items to warehouse 13b at Ash Shakyli during the next inspection.

9. On 7 February the team concentrated on inspecting the "Future Design Centre" established in a building located near the Rashid Hotel in downtown Baghdad. The building has four floors, a basement under the main part and an attached one-storey annex. The Iraqi authorities indicated that there were two tenants in the building: the Federation of Arab Scientific Research Councils, occupying the annex, the basement, space in the front halves of floors one and two and all of floor four; and the Design Centre, occupying the remaining space.

10. The Iraqi side acknowledged that the space occupied by the Design Centre had originally been acquired to house the PC-3 design centre visited by the sixth inspection team. The current activities of the Design Centre were described as providing civil engineering support to the reconstruction effort, with emphasis on power plants and damaged public buildings. Most offices were empty. The little documentation that was found was consistent with the declaration. It is likely that some of the staff of the new design centre has been reassigned from PC-3. However, other than some empty

file folders with identifying labels that looked like PC-3 project codes, there was no evidence of activities inconsistent with the declaration. Many offices, desks, filing cabinets etc. were locked and the key holders were taking advantage of the long weekend and could not be reached since Saturday (8 February) was a national holiday in Iraq. This resulted in the application of a large number of paper seals.

11. With regard to the offices of the Federation of Arab Scientific Research Councils, Iraqi representatives indicated that the Federation enjoyed diplomatic immunity in Iraq. The Team enquired in writing regarding the identity and status of the Federation. A declaration regarding the purpose and activities of the Federation was provided by its Secretary-General. He described the organization as a pan-Arab affiliation of 15 Arab States to promote, through conferences and symposia, the conduct of scientific research of particular interest to that part of the world. The Iraqi authorities secured the inspection team's access to the premises. The team's entry and the inspection took place in the presence of representatives of Iraq and of the Secretary-General of the Federation. The material in all offices, some material stored in the basement, a well equipped conference room and restaurant located in the annex and a small computer (HP 3000) located on the first floor are consistent with the stated purposes. A large database, including a patent library and descriptions of activities of other scientific associations, is maintained by the Federation. The explanation given was that the database provided the Federation with the means to recognize Arab contributions to scientific research.

12. The inspection at the Transportation Centre, Engineering Services Centre and the "Future Design Centre" required follow-up to deal with locked safes, filing cabinets etc. that had been sealed in the course of the inspection. In all cases the items were opened, sometimes forcibly by the Iraqi side, and the contents inspected. A question regarding how these organizations could function without operating records was put to the Iraqi side a number of times. Their consistent response was that the entire IAEC programme had been declared, that they had learned their lesson from the sixth IAEA inspection and that no records would be found anywhere in Iraq.

13. The Latifiyah Nuclear Agriculture Research Farm was designated as a suspect site used for storing equipment and documents. The farm, which is located 40 km south of Baghdad, was acquired by the IAEC two years ago to be used for nuclear applications in agriculture. The farm site consists of an office building, a greenhouse, a diesel generator and a few small warehouses. The farm was inspected and the findings are in agreement with the stated use. Some IAEC equipment had been stored at the farm, but only gas bottles were left. Smear samples were taken from the bottles. Though the inspection was carried out without advance notification - the designation was given to the counterpart 10 minutes before arrival - the staff seemed to be prepared for the visit.

Designated Sites in the Mosul area - All six sites in this area had been indicated to the IAEA as potential locations for heavy water production facilities.

14. The Badush Cement Works consists of two parts - a modern, large plant and an older, obsolete plant which is now shut down and abandoned. Both parts were visited. The operations were transparent and clearly those of a cement works. Cement dust was everywhere and the "roads" a morass of mud, making the taking of samples meaningless. The team considered this in any case unnecessary. The interior of the tall silos was examined to establish that these were not camouflage for exchange columns. The team was convinced that the plant was definitely a cement works as declared.

15. The North Mosul Prison Complex consists of two separate prisons. The first one visited was declared to be for short-term prisoners, but had been closed down since March 1991. The state of the interior seemed to confirm this. The second prison was quite different. It was stated to be used for criminals with long sentences. Most parts were visited, including the prison hospital, workshops, canteen, mosque etc. An examination of the electrical supplies was carried out, and this showed the load to be consistent with the use of the site as a prison. The team left with no doubt as to the nature of the site.

16. The Badush Dam Construction Site is a very large project with many warehouses. The site manager stated that it had previously employed over ten thousand workers but that, owing to the war and to acute electrical power supply problems caused by the war, most of these had been laid off. Most warehouses were visited and found to contain the usual equipment associated with a civil engineering site. The power supplies were found to total about five megawatts. The load was found to be consistent with the requirements of such a site. At the bottom of the dam itself there were ten pumps, eight of which were operating with a load of 2.4 MW. The site included barracks for the large number of workers.

17. The Badush Dam had been designated as a separate site, but in fact came under the same manager as the support site described above. It was explained that the Badush dam was being constructed as a result of foundation worries at the Mosul dam, where gypsum had been found. Buttresses and earthworks had been mainly completed. The power station at the base of the dam was visited, but it was in an early stage of construction. The planned output was 170MW. A significant factor at this site was the smell of hydrogen sulphide (H_2S). The manager explained that the concentration was so high that working shifts were limited to two hours following the death of six persons. There was no question that the high H_2S concentration was due to seepage from the ground as claimed. It could explain suspicions of heavy water enrichment, since hydrogen disulphide is a major constituent in one well known process. The team concluded that there was no evidence of covert activities.

18. The Mosul Military Production Facilities are a large complex with buildings well separated on individual hillocks several hundred meters apart. The site had been heavily damaged during the war. Each building appeared to have received individual attention by precision bombing. Most buildings had been totally destroyed, but reconstruction was taking place at some sites. Production was centered on specialized rubber, which was used to produce gas masks and protective clothing for chemical and biological warfare. Also, plastics were used to produce toys and trinkets among other things. It was clearly a very diversified plant. The entire site was examined. The quality control laboratories were intact but no significant findings were made. The rubber production building was also intact and reconstruction of the

main store had almost finished. This was built to a high standard with automated loading and shelf finding facilities. The high standard of security around the site with closed circuit TV around the entire perimeter, was particularly noted. One of the buildings had 24 small cooling towers which could have dissipated several megawatts. The associated building was destroyed, however, so no conclusions as to the work carried out could be reached. No evidence of any nuclear-related activity could be found.

19. The Mosul Construction Support Facility as designated consists of two separate areas either side of the main highway. Entry to the first area was gained easily. It consisted essentially of nine high-quality warehouses. No suspicious contents were found. The area on the other side of the road appeared to have no connection with the first area. The site was clearly a tyre depot such as is to be found in all countries. The site had the general run-down appearance of a typical cheap tyre site.